

**Title 13, Division 1, Chapter 1**  
**Article 3.7 – Testing of Autonomous Vehicles**

**§ 227.00. Purpose.**

(a) The regulations in this article implement, interpret and make specific Division 16.6 (commencing with section 38750) of the Vehicle Code, originally added by Statutes of 2012, Chapter 570 (SB 1298), providing for the regulation of autonomous vehicles operated on public roads in California.

(b) A motor vehicle shall not be operated in autonomous mode on public roads in California except as permitted under Vehicle Code section 38750 and the regulations in this article.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

**§ 227.02. Definitions.**

As used in this article, the following definitions apply:

(a) "Autonomous mode" is the status of vehicle operation where technology that is a combination of hardware and software, remote and/or on-board, performs the dynamic driving task, with or without a natural person actively supervising the autonomous technology's performance of the dynamic driving task. An autonomous vehicle is operating or driving in autonomous mode when it is operated or driven with the autonomous technology engaged.

(b) "Autonomous test vehicle" is a vehicle that has been equipped with technology that is a combination of both hardware and software that, when engaged, performs the dynamic driving task, but requires a human test driver or a remote operator to continuously supervise the vehicle's performance of the dynamic driving task.

(1) An autonomous test vehicle does not include vehicles equipped with one or more systems that provide driver assistance and/or enhance safety benefits but are not capable of, singularly or in combination, performing the dynamic driving task on a sustained basis without the constant control or active monitoring of a natural person.

(2) For the purposes of this article, an "autonomous test vehicle" is equipped with technology that makes it capable of operation that meets the definition of Levels 3, 4, or 5 of the SAE International's *Taxonomy and*

*Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles, standard J3016 (SEP2016), which is hereby incorporated by reference.*

- (3) The presence of a natural person who is an employee, contractor, or designee of the manufacturer in the vehicle to monitor a vehicle's autonomous performance shall not affect whether a vehicle meets the definition of autonomous test vehicle.
- (c) "Autonomous vehicle test driver" means a natural person seated in the driver's seat of an autonomous test vehicle, whether the vehicle is in autonomous mode or conventional mode, who possesses the proper class of license for the type of vehicle being driven or operated, and is capable of taking over active physical control of the vehicle at any time.
- (d) "Conventional mode" means the status of the vehicle when it is under the active physical control of a natural person sitting in the driver's seat operating or driving the vehicle with the autonomous technology disengaged.
- (e) "Designee" means the natural person identified by the manufacturer to the department as an autonomous vehicle test driver authorized by the manufacturer to drive or operate the manufacturer's autonomous test vehicles on public roads.
- (f) "Driver" means the natural person who is operating an autonomous vehicle when it is not operating in the autonomous mode.
- (g) "Dynamic driving task" means all of the real-time functions required to operate a vehicle in on-road traffic, excluding selection of final and intermediate destinations, and including without limitation: object and event detection, recognition, and classification; object and event response; maneuver planning; steering, turning, lane keeping, and lane changing, including providing the appropriate signal for the lane change or turn maneuver; and acceleration and deceleration.
- (h) "Manufacturer" means a manufacturer of autonomous technology as defined in Vehicle Code section 38750 (a)(5) and includes a vehicle manufacturer as defined in Vehicle Code section 672 that produces an autonomous vehicle from raw materials or new basic components; and, a person as defined in Vehicle Code section 470 who modifies any vehicle by installing autonomous technology.
- (i) "Minimal risk condition" is a low-risk operating condition that an autonomous vehicle automatically resorts to when either the automated driving systems fails

or when the human driver fails to respond appropriately to a request to take over the dynamic driving task.

**(j)** “Operational Design Domain” is the specific operating domain(s) in which an automated function or system is designed to properly operate, including but not limited to geographic area, roadway type, speed range, environmental conditions (weather, daytime/nighttime, etc.), and other domain constraints.

**(k)** “Passenger” means an occupant of a vehicle who has no role in the operation of that vehicle when the autonomous technology is engaged. A passenger may summon a vehicle or input a destination, but does not engage the technology, monitor the vehicle, or drive or operate the vehicle. A member of the public may ride as a passenger in an autonomous test vehicle if there are no fees charged to the passenger or compensation received by the manufacturer.

**(l)** “Personal information” means information that the autonomous vehicle collects, generates, records, or stores in an electronic form that is retrieved from the vehicles, that is not necessary for the safe operation of the vehicle, and that is linked or reasonably capable of being linked to the vehicle's registered owner or lessee or passengers using the vehicle for transportation services.

**(m)** “Public road” means “highway” as defined in Vehicle Code section 360, “offstreet public parking facility” as defined in Vehicle Code section 4000, and “street” as defined in Vehicle Code section 590.

**(n)** “Remote operator” is a natural person who: possesses the proper class of license for the type of test vehicle being operated; is not seated in the driver's seat of the vehicle; engages and monitors the autonomous vehicle; is able to communicate with occupants in the vehicle through a communication link. A remote operator may also have the ability to perform the dynamic driving task for the vehicle or cause the vehicle to achieve a minimal risk condition.

**(o)** “Testing” means the operation of an autonomous vehicle on public roads by employees, contractors, or designees of a manufacturer for the purpose of assessing, demonstrating, and validating the autonomous technology's capabilities.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Sections 360, 470, 590, 672, 4000 and 38750, Vehicle Code.

#### **§ 227.04. Requirements for a Manufacturer's Testing Permit.**

A manufacturer may conduct testing of autonomous vehicles on public roads in California if all of the following requirements are met:

- (a)** The manufacturer is conducting the testing.
- (b)** Except as provided in Section 227.38, when the vehicle is operated by an autonomous vehicle test driver who is an employee, contractor, or designee of the manufacturer, who has been certified by the manufacturer to the department as competent to operate the vehicle and has been authorized by the manufacturer to operate the vehicle.
- (c)** The manufacturer has in place and has provided the department with evidence of the manufacturer's ability to respond to a judgment or judgments for damages for personal injury, death, or property damage arising from the operation of autonomous vehicles on public roads in the amount of five million dollars (\$5,000,000), in the form of: an instrument of insurance issued by an insurer admitted to issue insurance in California; a surety bond issued by an admitted surety insurer or an eligible surplus lines insurer, and not a deposit in lieu of bond; or a certificate of self-insurance.
- (d)** The manufacturer has applied for and the department has issued to the manufacturer a Manufacturer's Testing Permit or a Manufacturer's Testing Permit - Driverless Vehicles to conduct autonomous vehicle testing on public roads in California.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

#### **§ 227.06. Evidence of Financial Responsibility.**

A manufacturer's obligation to provide evidence of an ability to respond to damages under Vehicle Code section 38750 is in addition to any other insurance obligation required by law.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

#### **§ 227.08. Instrument of Insurance.**

A manufacturer may satisfy the requirement of Vehicle Code section 38750(b)(3) to provide evidence of financial responsibility to the department as

a precondition of conducting testing of an autonomous vehicle on public roads by submitting evidence of the existence of an instrument of insurance as follows:

- (a) The instrument of insurance is issued by an insurer admitted to sell the line of insurance under which the policy is issued or an eligible surplus lines insurer that meets the requirements of Insurance Code section 1765.1.
- (b) The instrument of insurance specifies the name, National Association of Insurance Commissioner's (NAIC) number, and the address of the insurer providing the policy to the manufacturer.
- (c) The insurance policy insures the autonomous vehicles of the manufacturer.
- (d) The instrument specifies the policy number and the effective date and the expiration date of the policy.
- (e) The insurer certifies that the policy meets the requirements of Vehicle Code section 38750.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 1765.1, Insurance Code; Section 38750, Vehicle Code.

#### **§ 227.10. Surety Bond.**

A manufacturer may satisfy the requirement of Vehicle Code section 38750(b)(3) to provide evidence of financial responsibility as a precondition of conducting testing of autonomous vehicles on public roads by giving the department an instrument evidencing the existence of bond, as follows:

- (a) The bond shall be issued by an admitted surety.
- (b) The bond shall be in the penal amount of five million dollars (\$5,000,000).
- (c) The bond shall be conditioned that the surety shall be liable if the manufacturer, as principal, fails to pay any final judgment for damages for personal injury, death or property damage arising from an accident involving an autonomous vehicle operated by the manufacturer under Vehicle Code section 38750(b).
- (d) The bond shall be subject to the Bond and Undertaking Law, Chapter 2 (commencing with Section 995.010), Title 14, Part 2, of the Code of Civil Procedure.
- (e) The bond shall be considered a bond given as a condition of license or permit, shall be continuous in form, remain in full force and effect, and run

concurrently with the manufacturer's authority to test vehicles on public roads under Vehicle Code section 38750 and any and all renewals or until cancellation or withdrawal of the surety from the bond.

**(f)** The bond shall be a bond, and not a deposit in lieu of bond.

**(h)** The bond shall be submitted to the department on the Autonomous Vehicle Manufacturer Surety Bond, form OL 317 (NEW 9/2013), which is hereby incorporated and has been approved by the California Attorney General under Government Code sections 11110 through 11113.

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Section 995.010, Code of Civil Procedure; Sections 11110, 11111, 11112 and 11113, Government Code; and Section 38750, Vehicle Code.

#### **§ 227.12. Certificate of Self-Insurance.**

**(a)** A manufacturer may satisfy the requirement of Vehicle Code section 38750(b)(3) to provide evidence of financial responsibility as a precondition of conducting testing of autonomous vehicles on public roads by applying to the department for and being issued a certificate of self-insurance. The application shall be submitted on the Autonomous Vehicle Tester Program Application for Certificate of Self-Insurance, form OL 319 (REV 2/2017), which is hereby incorporated by reference.

**(b)** The manufacturer shall also submit with the application audited financial statements reflecting a net worth of not less than five million dollars (\$5,000,000) for the three year period immediately preceding the date of the application including, but not limited to, documents commonly known as balance sheets, profit and loss statements, explanatory notes or other documents which allow the department to determine the manufacturer's net worth.

**(1)** When an applicant has not been in existence for three years prior to the date of the application, the department may accept a financial statement covering the period the applicant has been in existence.

**(2)** The manufacturer shall submit an opinion of the financial condition of the manufacturer rendered by an independent certified public accountant, and not an employee or a person with a financial interest in the manufacturer, licensed to audit financial statements and render an opinion as to the subject's financial condition.

**(3)** The department shall not permit a manufacturer to operate under a certificate of self-insurance if its net worth is less than five million dollars (\$5,000,000), or if there are any outstanding unsatisfied final judgments against the manufacturer arising out of a motor vehicle collision.

**(d)** The department shall review the application. If the application is incomplete or insufficient, the department shall notify the manufacturer of the incompleteness or insufficiency and provide the manufacturer with a reasonable opportunity to cure the deficiencies. If the application is complete and the manufacturer meets all requirements for issuance, the department shall issue the manufacturer a certificate reciting that the manufacturer has permission from the department to satisfy the requirements of Vehicle Code section 38750(b)(3) by self-insurance.

**(e)** In the event the department receives information suggesting that the manufacturer no longer meets the requirements for permission to satisfy the requirements of Vehicle Code section 38750(b)(3) by self-insurance, the department may require additional evidence of the manufacturer's ability to respond to damage, and the manufacturer shall be required to provide additional evidence.

**(f)** The department may cancel a certificate of self-insurance for any of the following reasons:

**(1)** The holder of the certificate has not provided the additional evidence required by subdivision (e).

**(2)** Inability, refusal or failure of the holder of the certificate to submit financial statements and supporting documentation as required by subdivision (b).

**(3)** The submission of fraudulent or incomplete documents.

**(g)** Any suspension, revocation, or other involuntary termination of the permission to satisfy the requirements of Vehicle Code section 38750(b)(3) shall be subject to the hearing requirements provided in these regulations for the suspension or revocation of permits or authorizations under Vehicle Code section 38750.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Sections 16053 and 38750, Vehicle Code.

**§ 227.14. Autonomous Test Vehicles Proof of Financial Responsibility.**

(a) A manufacturer insured by a policy of insurance shall at all times maintain in its autonomous test vehicles a copy of the proof of insurance provided by the insurance company.

(b) A manufacturer shall maintain in its test vehicles at all times it is operated on public roads a copy of the bond, when the manufacturer relies upon a bond to comply with the requirements of Vehicle Code section 38750(b)(3).

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

**§ 227.16. Identification of Autonomous Test Vehicles.**

(a) A manufacturer shall not operate an autonomous test vehicle on public roads unless the manufacturer has provided the department, in writing, the identification of the autonomous vehicle to be used for testing on public roads. For each vehicle so identified, the manufacturer shall provide to the department all of the following:

- (1) The make, model, and model year of the vehicle, or other identifying information if such is not available.
- (2) The full vehicle identification number, or other identifying information if such is not available.
- (3) The license plate number and state of issuance.

(b) Each document identifying autonomous vehicles for testing shall be signed by a person authorized by the manufacturer to bind the manufacturer, under penalty of perjury under the laws of the State of California.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

**§ 227.18. Manufacturer's Testing Permit and Manufacturer's Testing Permit - Driverless Vehicles.**

(a) A manufacturer shall not conduct testing of an autonomous vehicle on public roads in California without having applied to the department for a permit to conduct testing, the department having issued an Autonomous Vehicle



Testing (AVT) Manufacturer's Testing Permit or a Manufacturer's Testing Permit - Driverless Vehicles to conduct testing, and the permit being currently in full force and effect.

**(b)** A manufacturer shall not test autonomous vehicles on public roads unless the manufacturer has tested the autonomous vehicles under controlled conditions that simulate, as closely as practicable, each Operational Design Domain in which the manufacturer intends the vehicles to operate on public roads and the manufacturer has reasonably determined that it is safe to operate the vehicles in each Operational Design Domain.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

#### **§ 227.20. Review of Application.**

**(a)** The department shall review the Autonomous Vehicle Tester Program (AVT) Application for Manufacturer's Testing Permit or a Manufacturer's Testing Permit - Driverless Vehicles, and notify the manufacturer within 10 days of receipt of the application whether it is complete or it is determined to be deficient. The department shall approve an application and issue a Manufacturer's Testing Permit after determining that the application is sufficient. The department shall approve an application and issue an Autonomous Vehicle Testing (AVT) Program Manufacturer Permit, form OL 315 (NEW 9/2013) or an Autonomous Vehicle Testing (AVT) Program Manufacturer Permit - Driverless Vehicles, form OL 315A, (NEW 2/2017), which are hereby incorporated by reference.

**(b)** The department shall notify the manufacturer of any deficiency and allow the manufacturer a reasonable period of time in which to correct the deficiency. The department will review material submitted to correct an application deficiency. If the department determines that the application remains deficient, the department shall notify the manufacturer/applicant of the continuing deficiency. The department shall deny an application if the manufacturer/applicant fails to make the application sufficient after a reasonable opportunity to do so.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

**§ 227.22. Term of Permit.**

(a) Every Manufacturer's Testing Permit or Manufacturer's Testing Permit - Driverless Vehicles, issued under this article shall be valid for a period of two years from midnight of the last day of the month of issuance unless sooner revoked or surrendered. Renewal of the permit for the ensuing two year period may be obtained by the manufacturer to whom the permit was issued upon application to and approval by the department and payment of the fee required by subsection (b).

(b) Every application for renewal of a Manufacturer's Testing Permit or a Manufacturer's Testing Permit - Driverless Vehicles, which expires pursuant to this section shall be made by the manufacturer to whom the permit was issued 60 days prior to the expiration date, and shall be made by submitting the completed renewal application form to the department and payment of the three thousand six hundred dollars (\$3,600) biennial renewal fee.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

**§ 227.24. Enrollment in Employer Pull Notice Program.**

(a) Prior to applying for a testing permit, a manufacturer shall enroll in the Employer Pull Notice Program pursuant to Vehicle Code section 1808.1.

(b) If the manufacturer fails to enroll in the Employer Pull Notice Program, the application for a testing permit shall be denied until the manufacturer provides proof that it has enrolled in the Employer Pull Notice Program.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Sections 1808.1 and 38750, Vehicle Code.

**§ 227.26. Prohibitions on Operation on Public Roads.**

A manufacturer shall not permit any of its autonomous test vehicles to be operated on public roads in California:

(a) By a person other than one of its employees, contractors, or designees who has been identified to the department as authorized by the manufacturer to operate the manufacturer's autonomous vehicle.

(b) By a person who does not meet the requirements of Section 227.34 of this Article.

(c) Except as provided in section 227.38, when an autonomous vehicle test driver is not seated in the vehicle's driver seat and monitoring its operations and able to take over physical control of the vehicle in the event of an autonomous technology failure or other emergency.

(d) When the manufacturer does not have in effect evidence or proof of financial responsibility as required by Vehicle Code section 38750 and these regulations and as required by any other insurance obligation required by law.

(e) When the Manufacturer's Testing Permit is revoked, suspended, expired, or otherwise not in full force and effect.

(f) When members of the public that are not employees, contractors, or designees are charged a fee to ride in the vehicle, or the manufacturer receives compensation for providing a ride to the members of the public.

(g) When members of the public are charged a fee or the manufacturer receives compensation for transporting property in motortrucks as defined in Section 227.28 of this article.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Sections 16000 and 38750, Vehicle Code.

#### **§ 227.28. Vehicles Excluded from Testing and Deployment.**

(a) The following vehicles shall not be approved for testing or deployment as autonomous vehicles on public roads:

(1) Trailers as defined in Vehicle Code section 242 (camp trailer), section 324 (fifth-wheel travel trailer), and section 635 (trailer coach).

(2) Motorcycles as defined in Vehicle Code section 400.

(3) Motor vehicles with interstate operating authority pursuant to Vehicle Code sections 8050 through 8058.

(4) A vehicle with a gross vehicle weight rating of 10,001 or more pounds.

(5) Vehicles described in Vehicle Code sections 31309 and 34500, excluding motortrucks as defined in Vehicle Code section 410 with a gross vehicle weight rating of less than 10,001 pounds.

(b) A permit to test or deploy autonomous vehicles is not a substitute for and does not replace any other license or permit requirement that may be necessary for a manufacturer's intended operation of vehicles on public roads.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Sections 242, 260, 324, 400, 410, 635, 8050 through 8058, and 38750 Vehicle Code.

### **§ 227.30. Manufacturer's Testing Permit Application.**

(a) A manufacturer desiring to conduct testing of autonomous vehicles on public roads in California shall submit an application for a permit to conduct testing to the department on Autonomous Vehicle Tester Program (AVT) Application for Manufacturer's Testing Permit, form OL 311 (Rev 2/2017), which is hereby incorporated by reference.

(1) The manufacturer shall submit a fee of three thousand six hundred dollars (\$3,600) for the processing of the application, which will permit the operation of up to 10 autonomous vehicles and up to 20 autonomous vehicle test drivers.

(2) The manufacturer may supplement the application with additional pages to add more than 10 vehicles and more than 20 drivers by submitting the fee of fifty dollars (\$50) for each additional set of 1 to 10 vehicles and 1 to 20 drivers.

(b) Within ten (10) days of any change to the contact information or the name of the manufacturer provided on the Application for Manufacturer's Testing Permit, a manufacturer shall notify the department in writing on the manufacturer's letterhead of the change, including changes in contact names, telephone numbers or mailing address.

(c) Any changes or modifications to the Manufacturer's Testing Permit required by the manufacturer during the term of the permit shall be accomplished by submitting a revised form OL 311 and submit the fee of seventy dollars (\$70) for the processing of the modification.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

**§ 227.32. Requirements for Autonomous Vehicle Test Drivers.**

A manufacturer shall not conduct testing of an autonomous vehicle on public roads unless the vehicle is operated or driven by an autonomous vehicle test driver who meets each of the following requirements:

- (a) The autonomous vehicle test driver is either in immediate physical control of the vehicle or is actively monitoring the vehicle's operations and capable of taking over immediate physical control.
- (b) The autonomous vehicle test driver is an employee, contractor or designee of the manufacturer.
- (c) The autonomous vehicle test driver shall obey all provisions of the Vehicle Code and local regulation applicable to the operation of motor vehicles whether the vehicle is in autonomous mode or conventional mode, except when necessary for the safety of the vehicle's occupants and/or other road users.
- (d) The autonomous vehicle test driver knows the limitations of the vehicle's autonomous technology and is capable of safely operating the vehicle in all conditions under which the vehicle is tested on public roads.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

**§ 227.34. Autonomous Vehicle Test Driver Qualifications.**

A manufacturer shall not allow any person to act as an autonomous vehicle test driver for testing autonomous vehicles on public roads unless all of the following have been met:

- (a) The manufacturer has identified the autonomous vehicle test driver to the department in writing, providing the driver's true full name and the driver's license number and jurisdiction of issuance of the license, and the autonomous vehicle driver has been issued an Autonomous Vehicle Testing (AVT) Program Test Vehicle Operator Permit, form OL 314 (NEW 9/2013), which is incorporated by reference.
- (b) The manufacturer has certified to the department, for each autonomous vehicle test driver permitted by the manufacturer to operate its autonomous vehicles on public roads, that the driver meets all of the following requirements:

- (1) The autonomous vehicle test driver has been licensed to drive a motor vehicle for the three years immediately preceding application to the department; and, at that time the driver:
  - (A) Did not have more than one violation point count determined as provided in subdivisions (a), (b), (c), (d), (e), (g), or (h) of Vehicle Code section 12810.
  - (B) Was not the at-fault driver of a motor vehicle involved in an accident that resulted in injury or death of any person.
  - (C) For the ten years immediately preceding application to the department was not convicted for driving or operating a vehicle under the influence of alcohol or any drug, and did not suffer any driver's license suspension or revocation based on driving or operating any vehicle under the influence of alcohol or of any drug.
- (2) The autonomous vehicle test driver has completed the manufacturer's autonomous vehicle test driver training program and the date the driver completed the program.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Sections 12810 and 38750, Vehicle Code.

#### **§ 227.36. Autonomous Vehicle Test Driver Training Program.**

A manufacturer conducting testing of autonomous vehicles on public roads shall maintain a training program for its autonomous vehicle test drivers and shall provide the department with a course outline and description of the autonomous vehicle test driver training program. The autonomous vehicle test driver training program shall include, but not be limited to the following:

(a) Instruction on the automated driving system technology to be tested in the manufacturer's vehicles, including behind the wheel instruction provided by an experienced driver on the capabilities and limitations of the manufacturer's automated driving systems.

- (1) For purposes of this section, an "experienced driver" is one who has met the qualifications provided in Section 227.34, subsections (a) and (b)(1) of this Article and through training and experience has developed skill and knowledge in the operation of the manufacturer's autonomous technology.

(b) Defensive driver training, including practical experience in recovering from hazardous driving scenarios.

(c) Instruction that matches the level of the autonomous test vehicle driver's experience operating the specific type of automated driving system technology with the level of technical maturity of the automated system.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

**§ 227.38. Manufacturer's Permit to Test Autonomous Vehicles That Do Not Require a Driver.**

A manufacturer desiring to conduct testing of autonomous vehicles capable of operating without the presence of a driver inside the vehicle on public roads in California shall submit an application for a permit to conduct driverless testing to the department on Autonomous Vehicle Tester (AVT) Program Application for a Manufacturer's Testing Permit - Driverless Vehicles, form OL 318 (New 2/2017), which is hereby incorporated by reference. Notwithstanding the requirements of Sections 227.04(b), 227.24, 227.26(a) and (b), 227.32, 227.34, and 227.36, a manufacturer may conduct testing of autonomous vehicles capable of operating without the presence of a driver inside the vehicle on public roads in California if all of the following requirements are met:

(a) The manufacturer certifies that the local authorities, as defined in Vehicle Code section 385, within the jurisdiction where the vehicle will be tested have been provided a written notification, a copy of which must be submitted to the department, that contains all of the following:

- (1) The operational design domain of the test vehicles.
- (2) A list of all public roads in the jurisdiction where the vehicles will be tested.
- (3) The date that testing will begin.
- (4) The days and times that testing will be conducted on public roads.
- (5) The number of vehicles to be tested and the types of vehicles to be tested.
- (6) Contact information, including name, telephone number, address, and email for the contact person for the manufacturer conducting the testing.

**(b)** The manufacturer certifies that the autonomous test vehicle complies with the all of the following:

**(1)** There is a communication link between the vehicle and the remote operator to provide information on the vehicle's location and status and allow two-way communication between the remote operator and any passengers if the vehicle experiences any failures that would endanger the safety of the vehicle's passengers or other road users, or otherwise prevent the vehicle from functioning as intended, while operating without a driver. The certification shall include:

**(A)** That the manufacturer will continuously monitor the status of the vehicle and the two-way communication link while the autonomous test vehicle is being operated without a driver;

**(B)** A description of how the manufacturer will monitor the communication link; and,

**(C)** An explanation of how all of the vehicles tested by the manufacturer will be monitored.

**(2)** There is a process to display or communicate vehicle owner or operator information as specified in Vehicle Code section 16025 in the event that the vehicle is involved in a collision or if there is a need to provide that information to a law enforcement officer for any reason.

**(3)** The subject autonomous vehicles comply with all required Federal Motor Vehicle Safety Standards, Title 49 Code of Federal Regulations, Part 571 and the California Vehicle Code, Division 12 (Equipment of Vehicles), except for manufacturers exempt from such requirements pursuant to 49 U.S.C. § 30112(b)(10). Alternatively, the manufacturer shall provide evidence of an exemption that has been approved by the National Highway Traffic Safety Administration.

**(c)** The manufacturer certifies that the autonomous vehicles are capable of operating without the presence of a driver inside the vehicle and that the autonomous technology meets the description of a level 4 or level 5 automated driving system under SAE International's *Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles*, standard J3016 (SEP2016), which is hereby incorporated by reference.

**(d)** The manufacturer informs the department of the intended operational design domains of the autonomous vehicle.



(e) The manufacturer provides a copy of a law enforcement interaction plan, which includes information that the manufacturer will make available to the law enforcement agencies and other first responders in the vicinity of the operational design domains of the autonomous vehicles that will instruct those agencies on how to interact with the vehicle in emergency and traffic enforcement situations. For the purposes of this section “first responder” means law enforcement, fire department, and emergency medical personnel.

(1) The law enforcement interaction plan shall include, but not be limited to the following:

- (A) How to communicate with a remote operator of the vehicle who is available at all times that the vehicle is in operation, including providing a contact telephone number for the manufacturer;
- (B) Where, in the vehicle, to obtain owner information, vehicle registration, and proof of insurance in the event of a collision or traffic violation involving the vehicle;
- (C) How to safely remove the vehicle from the roadway;
- (D) How to recognize whether the vehicle is in autonomous mode, and if possible, how to safely disengage the autonomous mode;
- (E) How to detect and ensure that the autonomous mode has actually been deactivated,
- (F) How to safely interact with electric and hybrid vehicles, when applicable.
- (G) A description of the operational design domain of the vehicle.
- (H) Any additional information the manufacturer deems necessary regarding hazardous conditions or public safety risks associated with the operation of the autonomous vehicle.

(2) The law enforcement interaction plan shall be reviewed on a regular basis by the manufacturer and updated as changes are needed, but no less than an annual basis.

(3) Within 10 days of approval of the testing application, the manufacturer shall submit the law enforcement interaction plan to the California Highway Patrol by E-mail to, [AVUnit@chp.ca.gov](mailto:AVUnit@chp.ca.gov).

(4) Manufacturers shall provide other law enforcement agencies and first responders in the vicinity of the operational design domain where testing of driverless autonomous vehicles is being conducted and the

department with the internet web site address where the law enforcement interaction plan may be accessed.

**(f)** The manufacturer shall maintain a training program for its remote operators and certify that each remote operator has completed training sufficient to enable him or her to safely execute the duties of a remote operator and possesses the proper class of license for the type of test vehicle being operated. The manufacturer shall provide the department with a course outline and description of the remote operator training program and the date that each remote operator completed the program. The remote operator training program shall include, but not be limited to the following:

**(1)** Instruction on the automated driving system technology being tested, including how to respond to emergency situations and hazardous driving scenarios that could be experienced by the vehicle or the vehicle's occupants.

**(2)** The instruction shall match the level and technical maturity of the automated driving system.

**(g)** Manufacturers that have publicly disclosed an assessment demonstrating their approaches to achieving safety shall provide the department with a copy of that assessment.

**(h)** The manufacturer shall disclose to any passenger in the vehicle that is not an employee, contractor, or designee of the manufacturer what personal information, if any, that may be collected about the passenger and how it will be used.

**(i)** The manufacturer shall submit the fee of three thousand six hundred dollars (\$3,600.00) for the processing of the application which will accommodate up to 10 driverless autonomous test vehicles. The manufacturer may supplement the application with additional pages to add more than 10 vehicles by submitting the additional fee of fifty dollars (\$50) for each set of 1 to 10 vehicles.

**(j)** Within ten (10) days of any change to the contact information or the name of the manufacturer provided on the Application for Manufacturer's Testing Permit - Driverless Vehicles, a manufacturer shall notify the department in writing on the manufacturer's letterhead of the change, including changes in contact names, telephone numbers, or mailing address.

**(k)** The manufacturer shall submit a revised form OL 318 as specified in subdivision (m) of this section prior to implementing changes to:

- (1) Make the vehicle capable of operation at a SAE International level that is different than and/or in addition to the level in the approved permit.
  - (2) Make the vehicle capable of operation on a roadway type that is different than and/or in addition to those in the approved permit.
  - (3) Increase the maximum speed of the vehicle by more than 15 miles per hour.
  - (4) Make the vehicle capable of operation in geographic areas different than and/or in addition to those in the approved permit.
- (f) Any changes or modifications to the Manufacturer's Testing Permit - Driverless Vehicles required by the manufacturer during the term of the permit shall be accomplished by submitting a revised form OL 318 and submit the additional fee of seventy dollars (\$70) for the processing of the modification.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Sections 385, 16025 and 38750, Vehicle Code; and Title 49 Code of Federal Regulations, Part 571.

#### **§ 227.40. Refusal of Autonomous Vehicle Testing Permit or Testing Permit Renewal.**

The department may refuse an application for an original or a renewal of a Manufacturer's Testing Permit or a Manufacturer's Testing Permit - Driverless Vehicles:

- (a) For a violation of Vehicle Code section 38750 or this Article.
- (b) For any act or omission of the manufacturer or one of its agents, employees, contractors, or designees which the department finds makes the conduct of autonomous vehicle testing on public roads by the manufacturer an unreasonable risk to the public.
- (c) The department shall provide a written notice of a refusal to issue a Manufacturer's Testing Permit, or a Manufacturer's Testing Permit - Driverless Vehicles as specified in Government Code section 11504.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 11504, Government Code; and Section 38750, Vehicle Code.

**§ 227.42. Suspension or Revocation of Autonomous Vehicle Testing Permit.**

(a) The department may suspend or revoke the Manufacturer's Testing Permit of any manufacturer for any of the following reasons:

- (1) The manufacturer has failed to maintain financial responsibility in the amount required by Vehicle Code section 38750 and Sections 227.06, 227.08, or 227.12 of this Article.
- (2) The manufacturer has violated Vehicle Code section 38750 or this Article.
- (3) Any act or omission of the manufacturer or one of its agents, employees, contractors, or designees which the department finds makes the conduct of autonomous vehicle testing on public roads by the manufacturer an unreasonable risk to the public.

(b) The department may suspend or revoke the Manufacturer's Testing Permit - Driverless Vehicles of any manufacturer for any of the following reasons:

- (1) The manufacturer has failed to maintain financial responsibility in the amount required by Vehicle Code section 38570 and Sections 227.06, 227.08, or 227.12 of this Article.
- (2) The manufacturer has violated Vehicle Code section 38750 or this Article.
- (3) The manufacturer's driverless autonomous vehicles are operating outside of operational design domain specified in the application submitted pursuant to Section 227.38 of this article.
- (4) The manufacturer fails to make the disclosures required by subdivision (i) of Section 227.38.
- (5) Any act or omission of the manufacturer or one of its agents, employees, contractors, or designees which the department finds makes the conduct of autonomous vehicle testing on public roads by the manufacturer an unreasonable risk to the public.

(c) The department will provide a 15-day written notice and follow the procedures specified in Government Code section 11505, to the manufacturer before suspending or revoking the Manufacturer's Testing Permit or a Manufacturer's Testing Permit - Driverless Vehicles. However, the department shall immediately suspend or revoke the Manufacturer's Testing Permit or a Manufacturer's Testing Permit - Driverless Vehicles if a manufacturer is engaging in a practice in such a manner that immediate suspension is required for the safety of persons on a public road.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 11505, Government Code; and Section 38750, Vehicle Code.

**§ 227.44. Demand for Hearing.**

(a) Upon a refusal by the department to issue or renew a Manufacturer's Testing Permit or a Manufacturer's Testing Permit - Driverless Vehicles, or upon the suspension or revocation of either permit by the department, the manufacturer shall be entitled to demand in writing a hearing before the director or his or her representative within 60 days after the notice of refusal.

(b) The hearing shall be conducted pursuant to the provisions of Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 11500, Government Code; and 38750, Vehicle Code.

**§ 227.46. Reinstatement of Testing Permit.**

Upon the suspension or revocation of a Manufacturer's Testing Permit or a Manufacturer's Testing Permit - Driverless Vehicles by the department, the manufacturer shall cease all testing of autonomous vehicles on public roads until the department has verified that the manufacturer has taken appropriate action to correct the deficiencies that caused the suspension or revocation and the department has lifted the suspension or revocation.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

**§ 227.48. Reporting Collisions.**

A manufacturer whose autonomous vehicle while operating under a Manufacturer's Testing Permit or a Manufacturer's Testing Permit - Driverless Vehicles is in any manner involved in a collision originating from the operation of the autonomous vehicle on a public road that resulted in the damage of property or in bodily injury or death shall report the collision to the department, within 10 days after the collision, on Report of Traffic Collision Involving an Autonomous Vehicle, form OL 316 (REV 2/2017) which is hereby incorporated by

reference. The manufacturer shall identify on the form, by name and current address, if available, all persons involved in the collision, and a full description of how the collision occurred. Nothing in this section relieves any person from compliance with any other statutory and/or regulatory collision reporting requirements.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

### **§ 227.50. Reporting Disengagement of Autonomous Mode.**

**(a)** Upon receipt of a Manufacturer's Testing Permit or a Manufacturer's Testing Permit - Driverless Vehicles, a manufacturer shall commence retaining data related to the disengagement of the autonomous mode. For the purposes of this section, "disengagement" means a deactivation of the autonomous mode when a failure of the autonomous technology is detected or when the safe operation of the vehicle requires that the autonomous vehicle test driver disengage the autonomous mode and take immediate manual control of the vehicle, or in the case of driverless vehicles, when the safety of the vehicle, the occupants of the vehicle, or the public requires that the autonomous technology be deactivated.

**(b)** Every manufacturer authorized under this article to test autonomous vehicles on public roads shall prepare and submit to the department an annual report summarizing the information compiled pursuant to subsection (a) by January 1st, of each year.

**(1)** The first report shall cover the period from the date of issuance of the Manufacturer's Testing Permit or a Manufacturer's Testing Permit - Driverless Vehicles to November 30th of the following year. A manufacturer that holds both a Manufacturer's Testing Permit and a Manufacturer's Testing Permit - Driverless Vehicles may submit a single report that makes clear which disengagements occurred under each type of testing permit.

**(2)** After the first report, subsequent annual reports shall cover the period December 1st of the current year to November 30th of the following year.

**(3)** The annual report shall summarize disengagements as follows:

**(A)** An indication of whether the test vehicle is capable of operating without a driver,

- (B) The circumstances or testing conditions at the time of the disengagement including:
- (i) The location: interstate, freeway, highway, rural road, street, or parking facility.
  - (ii) Whether the vehicle was operating with or without a driver at the time of the disengagement.
  - (iii) A description of the facts causing the disengagements, including: weather conditions, road surface or traffic conditions, construction, emergencies, accidents or collisions. The description should be written in plain language with enough detail that a non-technical person can understand the circumstances triggering the disengagement.
  - (iv) The party that initiated the disengagement (autonomous technology, autonomous vehicle test driver, remote operator, or passenger).

(4) The annual report shall include the total number of miles each autonomous vehicle tested in autonomous mode on public roads each month.

(c) The annual report shall be submitted to the department on the Annual Report of Autonomous Vehicle Disengagements, form OL 311R (NEW 9/2017), which is hereby incorporated by reference.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

#### **§ 227.52. Test Vehicle Registration and Certificates of Title.**

(a) A person shall not drive, move, or leave standing an autonomous test vehicle upon public roads unless the department has been notified of its use pursuant to Section 227.16 of this Article.

(b) In addition to the requirements set forth in Vehicle Code section 4150, an application for original registration of an autonomous test vehicle shall include:

- (1) The certificate of ownership or certificate of origination from the vehicle manufacturer as defined in Vehicle Code section 672.

(2) A written description of the autonomous technology or features integrated into the vehicle and the functional capabilities made possible by this technology.

(c) In addition to the requirements set forth in Vehicle Code section 5902, an application for transfer of ownership of an autonomous test vehicle shall include a written description of the autonomous technology or features integrated into the vehicle.

(d) An autonomous test vehicle shall be identified as such on the face of the registration card and any certificate of ownership and the Autonomous Vehicle Testing (AVT) Program Test Vehicle Permit, form OL 313 (REV 2/2017), which is incorporated by reference, issued by the department pursuant to this Article.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 43014, Health and Safety Code; and Sections 672, 4150, 5902, 9255.1 and 38750, Vehicle Code.

#### **§ 227.54. Transfers of Interest or Title for an Autonomous Test Vehicle.**

No person shall offer for sale, sell, transfer, or dispose of an autonomous test vehicle, or major component parts for such a vehicle that has been used for testing purposes on public roads except as follows:

(a) To a manufacturer holding a valid autonomous vehicle Manufacturer's Testing Permit or a Manufacturer's Testing Permit - Driverless Vehicles.

(b) The manufacturer disposing of the vehicle has obtained a Nonrepairable Vehicle Certificate ensuring that the vehicle is not retitled or resold, and ownership of the vehicle is transferred to an auto dismantler.

(c) Transfer of ownership to an educational or research institution or a museum where it would be appropriate for display or study.

(d) The manufacturer disposing of the vehicle has obtained a Nonrepairable Vehicle Certificate ensuring that the vehicle is not retitled or resold and the manufacturer has internally dismantled or disposed of its own vehicle and its major component parts.

NOTE: Authority cited: Sections 1651 and 38750; Vehicle Code. Reference: Section 38750; Vehicle Code.



**Title 13, Division 1, Chapter 1**  
**Article 3.8 – Deployment of Autonomous Vehicles**

**§228.00. Purpose**

In the National Traffic and Motor Vehicle Safety Act of 1966 (49 U.S.C. section 30101 et seq.; “Safety Act”), Congress directed the U.S. Department of Transportation to prescribe motor vehicle safety standards. The National Highway Traffic Safety Administration is vested with the authority to develop Federal Motor Vehicle Safety Standards (49 C.F.R. Part 501, section 501.3). Under the Safety Act, no motor vehicle can be sold for use on public roads in the United States unless the vehicle manufacturer certifies that the vehicle meets the performance requirements specified in the Federal Motor Vehicle Safety Standards adopted by the National Highway Traffic Safety Administration, or the manufacturer has received the appropriate exemption from the National Highway Safety Administration.

**(a)** The regulations in this article implement, interpret and make specific Division 16.6 (commencing with section 38750) of the Vehicle Code, originally added by Statutes of 2012, Chapter 570 (SB 1298), providing for the regulation of the deployment of autonomous vehicles on public roads in California consistent with the Federal Motor Vehicle Safety Standards.

**(b)** An autonomous vehicle shall not be deployed on public roads in California except as permitted under Vehicle Code section 38750 and the regulations in this article.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

**§228.02. Definitions**

As used in this article the following definitions apply:

**(a)** “Autonomous technology data recorder” is a mechanism, in addition to, and separate from, any other mechanism required by law, installed in an autonomous vehicle to record technical information about the status and operation of the vehicle’s autonomous technology sensors for 30 seconds prior to a collision.

**(b)** “Autonomous vehicle” means any vehicle equipped with technology that is a combination of both hardware and software that has the capability of performing the dynamic driving task without the active physical control or

monitoring of a natural person, excluding vehicles equipped with one or more systems that enhance safety or provide driver assistance but are not capable of driving or operating the vehicle without the active physical control or monitoring of a human. For the purposes of this article an “autonomous vehicle” meets the definition of levels 3, 4, or 5 of the SAE International’s *Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles, Standard J3016 (SEP2016)*, which is hereby incorporated by reference.

(c) “Deployment” means the operation of an autonomous vehicle on public roads by members of the public who are not employees, contractors, or designees of a manufacturer or for purposes of sale, lease, providing transportation services or transporting property for a fee, or otherwise making commercially available outside of a testing program.

(d) The definitions specified in Section 227.02 of Article 3.7 shall also apply to this article.

NOTE: Authority cited: Sections 1651 and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

#### **§228.04. Financial Requirements for a Permit to Deploy Autonomous Vehicles on Public Roads.**

(a) A manufacturer of autonomous vehicles, both those that require a driver inside the vehicle and those that do not require a driver inside the vehicle, may satisfy the requirements of Vehicle Code section 38750 (c)(3) by presenting evidence of one of the following:

(1) The manufacturer has in place and has provided the department with evidence of the manufacturer’s ability to respond to a judgment or judgments for damages for personal injury, death, or property damage arising from collisions or accidents caused by the autonomous vehicles produced by the manufacturer in the form of an instrument of insurance, a surety bond, or proof of self-insurance.

(2) A surety bond, that meets the requirements of Section 227.10 of Article 3.7, and is conditioned that the surety shall be liable if the manufacturer, as principal, fails to pay any final judgment for damages for personal injury, death or property damage arising from a collision involving an autonomous vehicle deployed by the manufacturer pursuant to Vehicle Code section 38750(c), and shall be submitted to the department with the Autonomous Vehicles Manufacturer Deployment Program Surety

Bond, form OL 317A (New 6/2014), which is hereby incorporated by reference.

(3) An insurance that meets the requirements of Section 227.08 of Article 3.7.

(4) A proof of self-insurance shall meet the requirements of, and be governed by, Section 227.12 of Article 3.7 and shall be submitted to the department on an Autonomous Vehicle Manufacturer's Deployment Program Application for Certificate of Self-Insurance, form OL 319A (New 2/2017), which is hereby incorporated by reference.

(b) Any cancellation of the permission to satisfy the requirements of Vehicle Code section 38750, subsection (c)(3), shall be subject to the hearing requirements provided in these regulations for the suspension or revocation of permits or authorizations.

(c) The manufacturer's evidence of financial responsibility as required by Vehicle Code section 38750, subsection (c)(3), is in addition to that required by Vehicle Code section 38750, subsection (b)(3), and does not absolve any vehicle owner of the requirement to be able to show, at all times, evidence of financial responsibility in the amounts specified in Vehicle Code section 16056.

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Section 995.010, Code of Civil Procedure; Sections 11110 through 11113, Government Code; Section 16056, and Section 38750, Vehicle Code.

#### **§228.06. Application for a Permit for Post-Testing Deployment of Autonomous Vehicles on Public Roads.**

(a) Except for testing as provided in Sections 227.30 and 227.38 of Article 3.7 an autonomous vehicle shall not be deployed on any public road in California until the manufacturer has submitted and the department has approved an Application for a Permit to Deploy Autonomous Vehicles on Public Streets, form OL 321 (New 2/2017), which is hereby incorporated by reference.

(1) The manufacturer shall identify in the application the operational design domain in which the subject autonomous vehicles are designed to operate and certify that the vehicles are designed to be incapable of operating in the autonomous mode in areas outside of the disclosed operational design domain.

- (2) The manufacturer shall identify any commonly-occurring or restricted conditions, including but not limited to: snow, fog, black ice, wet road surfaces, construction zones, and geo-fencing by location or road type, under which the vehicles are either designed to be incapable of operating or unable to operate reliably in the autonomous mode or state the mechanism for safely disengaging out of autonomous mode in the event of experiencing conditions outside of its operational design domain.
- (3) The manufacturer shall describe how the vehicle is designed to react when it is outside of its operational design domain or encounters the commonly-occurring or restricted conditions disclosed on the application. Such reactions can include measures such as notifying and transitioning control to the driver, transitioning to a minimal risk condition, moving the vehicle a safe distance from the travel lanes, or activating systems that will allow the vehicle to continue operation until it has reached a location where it can come to a complete stop.
- (4) The manufacturer shall submit the fee of three thousand two hundred and seventy-five dollars (\$3,275) for the processing of the application.
- (5) The manufacturer must provide on the application the number of the Manufacturer's License issued by the department pursuant to Vehicle Code section 11701.
- (6) The manufacturer shall certify in the application that the autonomous vehicles are equipped with an autonomous technology data recorder that captures and stores autonomous technology sensor data for all vehicle functions that are controlled by the autonomous technology at least 30 seconds before a collision with another vehicle, person, or other object while the vehicle is operating in autonomous mode. The data captured and stored by the autonomous technology data recorder, in a read only format, must be capable of being accessed and retrieved by a commercially available tool.
- (7) The manufacturer shall certify that the autonomous vehicles comply with all applicable Federal Motor Vehicle Safety Standards, Title 49 Code of Federal Regulations, Part 571, and the California Vehicle Code, Division 12 (Equipment of Vehicles), or the manufacturer shall provide evidence of an exemption that has been approved by the National Highway Traffic Safety Administration.

- (8) The manufacturer shall certify that the autonomous technology meets Federal Motor Vehicle Safety Standards, if any, for the vehicles' model year, and that the autonomous technology does not make inoperative any Federal Motor Vehicle Safety Standards, Title 49 Code of Federal Regulations, Part 571, and the California Vehicle Code, Division 12 (Equipment of Vehicles).
- (9) The manufacturer shall certify that the autonomous technology is designed to detect and respond to roadway situations in compliance with all provisions of the California Vehicle Code and local regulation applicable to the performance of the dynamic driving task in the vehicle's operational design domain, except when necessary to enhance the safety of the vehicle's occupants and/or other road users.
  - (A) The manufacturer shall also certify that, when necessary, it will make available updates pertaining to the autonomous technology at least annually or by the effective date of any changes in the California Vehicle Code and local regulation applicable to the operation of motor vehicles to ensure that the autonomous vehicle is in compliance with any changes made to the California Vehicle Code and local regulation applicable to the performance of the dynamic driving task in the vehicle's operational design domain.
  - (B) The manufacturer shall also certify that it will make available updates pertaining to location and mapping information utilized or referenced by the autonomous technology for the safe operation of the vehicle in the operational design domain on a continual basis consistent with changes to the physical environment captured by the maps sensors, or other information.
  - (C) The manufacturer shall notify the registered owner of the autonomous vehicle of the availability of the updates pursuant to (A) and (B) above and provide instructions on how to access the updates.
- (10) A certification that the autonomous vehicles meet appropriate and applicable current industry standards to help defend against, detect, and respond to cyber-attacks, unauthorized intrusions, or false vehicle control commands.
- (11) A certification that the manufacturer has conducted test and validation methods and is satisfied, based on the results of the tests and validations, that the vehicles are safe for deployment on public roads in California.

**(b)** In addition to the requirements specified in subsection (a), for vehicles that do not require a driver, the manufacturer shall also certify that the vehicle complies with all of the following:

- (1)** A communication link between the vehicle and the remote operator, if any, to provide information on the vehicle's location and status and allow two-way communication between the remote operator and any passengers, if applicable, should the vehicle experiences any failures that would endanger the safety of the vehicle's passengers or other road users while operating without a driver.
- (2)** The ability to display or transfer vehicle owner or operator information as specified in Vehicle Code section 16025 in the event that the vehicle is involved in a crash, collision, or accident or if there is a need to provide that information to a law enforcement officer for any reason.
- (3)** Any vehicle that is not equipped with manual controls for completing the dynamic driving task, such as a steering wheel, brake pedal, and accelerator pedal, complies with all applicable Federal Motor Vehicle Safety Standards, or the manufacturer provides evidence of an exemption that has been approved by the National Highway Traffic Safety Administration.

**(c)** The manufacturer shall submit with the application all of the following:

- (1)** For vehicles to be sold or leased to persons other than the manufacturer, a consumer or end user education plan, which covers the operational design domain of the vehicle, which also includes the following:
  - (A)** The identification of any and all restrictions of the autonomous technology in the autonomous vehicles and an explanation of the educational materials that will be provided to end users of the autonomous vehicles produced by the manufacturer.
  - (B)** A copy of the sections of the vehicle owner's manual, or an equivalent vehicle operator instruction guide or pamphlet that provides information on the following:
    - (i)** The mechanism to engage and disengage the autonomous technology showing that the mechanism is easily accessible to the vehicle operator.
    - (ii)** The visual indicator inside the vehicle's cabin to indicate when the autonomous technology is engaged.

- (iii) The operator and manufacturer's responsibilities with respect to the operation of the autonomous vehicles.
  - (C) An explanation how end users will receive education after purchasing a previously-owned vehicle.
  - (D) The internet web site address where copies of the end user education plan may be accessed shall be provided at no cost to law enforcement and emergency response agencies in the vicinity of the operational design domain of the vehicles and shall be provided to the California Highway Patrol at the E-mail address provided in section 227.38 (f)(3) of Article 3.7.
- (2) A description of how a vehicle that meets the Society of Automotive Engineers' definition of a level 4 or level 5 vehicle, or for vehicles that meet the Society of Automotive Engineers' definition of a level 3 vehicle and the driver does not or is unable to take manual control of the vehicle, will safely come to a complete stop when there is an autonomous technology failure that would endanger the safety of the vehicle's occupants or other road users, including but not limited to, all of the following:
- (A) To the extent practicable, moving the vehicle a safe distance from the travel lanes.
  - (B) Activation of systems that will allow the vehicle to continue operation until the vehicle has reached a location where it can come to a complete stop.
- (3) A copy of a law enforcement interaction plan that meets all of the requirements specified in Section 227.38 (f) of Article 3.7.
- (4) A copy of the written disclosure required by Section 228.24.
- (5) A certification that the subject autonomous vehicle satisfies each requirement of Vehicle Code section 38750, subsection (c)(1).
- (6) A certification that the manufacturer has complied with its responsibility to register with the National Highway Traffic Safety Administration and that it is aware of its responsibilities to comply with federal motor vehicle safety requirements.
- (7) A summary of the manufacturer's autonomous technology testing in the operational design domain in which the subject autonomous vehicles are designed to operate. The summary shall describe all locations where the vehicle has been tested and shall include:
- (A) The total number of vehicle test miles driven on public roads, on test tracks, or other private roads in autonomous mode.

- (B) A description of the testing methods used to validate the performance of the subject autonomous vehicles.
- (C) The number of collisions originating from the operation of the autonomous test vehicles in autonomous mode on public roads that resulted in damage of property to any one person in excess of one thousand dollars (\$1,000), or bodily injury or death, and a full description of the cause of each collision and measures taken to remediate the cause of each collision where applicable.
- (d) Manufacturers that have publicly disclosed an assessment demonstrating their approaches to achieving safety shall provide the department with a copy of that assessment.
- (e) The requirements identified in subsections (b), (c), and (d) of this section shall be submitted as follows:
  - (1) Documents shall be submitted on business letterhead and clearly identify the party
  - (2) Each plan or report shall contain at least a two-page summary including the contents and conclusion of the plan or report. Charts, graphs or other visual or audio materials may be included as attachments to the summary.
  - (3) Each page shall be sequentially numbered, and contain the name of the party completing the plan or report, and shall name or identify the subject autonomous vehicles covered by the technology in the plan or report.
  - (4) Each plan or report shall be signed and dated under penalty of perjury, by the party completing the plan or report, certifying the correctness of its contents.

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Sections 322, 11701, and 38750, Vehicle Code; Title 49 Code of Federal Regulations, Part 571.

#### **§228.08. Review of Application.**

- (a) The department shall review the applications submitted pursuant to Section 228.06 and notify the manufacturer within thirty (30) business days of receipt whether the application is determined to be incomplete. After notification by the department, manufacturers may submit materials necessary to complete



the application up to one year after the date of the original submission of the application.

**(b)** Applications deemed complete will be reviewed for approval, except as required by the timeframes set forth in Vehicle Code section 38750.

**(c)** The department shall issue a notice of correction to manufacturers whose applications are deemed deficient in content details within thirty (30) business days of the application being deemed complete. The manufacturer may resubmit the application with the corrections required by the notice of correction within one year of the original submission of the application.

**(d)** Pending applications that have not been approved by the department after notice of incompleteness under subsection (a) or notice of correction under subsection (c) shall expire one year from the original date of submission to the department.

**(e)** The department shall approve the application if the manufacturer has:

**(1)** Submitted all the information and certifications required by Sections 228.04 and 228.06; and,

**(2)** based on the submitted information and certifications, conducted testing necessary to satisfy the department that the subject autonomous vehicles are safe to operate on public roads.

**(f)** An application submitted under section 228.06 (b) will not be approved until 30 days after the department has provided the public notice require by Vehicle Code Section 38750 (f).

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

#### **§228.10. Amendment of Application.**

**(a)** Within ten (10) days of any change to the contact information or the name of the manufacturer provided on the Application for a Permit to Deploy Autonomous Vehicles on Public Streets or Application for a Permit to Deploy Driverless Autonomous Vehicles on Public Streets, a manufacturer shall notify the department in writing on the manufacturer's letterhead of the change, including changes in contact names, telephone numbers, or mailing address.

**(b)** A manufacturer shall submit an amended application for public deployment prior to implementing changes that:

- (1) Make the vehicle capable of operation at a SAE International level that is different than and/or in addition to the level in the approved permit.
  - (2) Make the vehicle capable of operation on a roadway type that is different than and/or in addition to those in the approved permit.
  - (3) Increase the maximum speed of the vehicle by more than 15 miles per hour.
  - (4) Make the vehicle capable of operation in geographic areas different than and/or in addition to those in the approved permit.
  - (5) Remove any commonly-occurring or restricted conditions that were identified on the approved permit.
- (c) A manufacturer shall not deploy vehicles with the changes specified in this section until the amended application has been approved by the department.

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

#### **§228.12. Reporting Safety Defects.**

A manufacturer who identifies a safety-related defect in their autonomous technology that creates an unreasonable risk to safety shall submit to the department a copy of the report prepared in compliance with the timeframe and requirements specified in Part 573, Title 49 of the Code of Federal Regulations.

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code; Part 573, Title 49, Code of Federal Regulations.

#### **§228.14. Conditions Related to the Term of Permit.**

Every Permit to Deploy Autonomous Vehicles on Public Streets issued under this article shall be valid until such time that it is suspended or revoked by the department pursuant to section 228.22 or surrendered by the manufacturer.

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

#### **§228.16. Refusal of an Application for a Permit to Deploy**

The department may refuse an Application for a Permit to Deploy Autonomous Vehicles on Public Streets for any of the following:

- (a)** If a manufacturer violates any provision of Vehicle Code section 38750, subsection (c), or this Article.
- (b)** For any act or omission of the manufacturer or one of its agents, employees, contractors, or designees which the department determines creates a safety risk to the public.
- (c)** The department shall provide a written notice of a refusal to issue a Permit to Deploy Autonomous Vehicles on Public Streets as specified in Government Code section 11504.

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Section 11504, Government Code, Section 38750, Vehicle Code.

#### **§228.18. Demand for Hearing on Refusal of Permit.**

- (a)** Upon refusal by the department to issue a Permit to Deploy Autonomous Vehicles on Public Streets, a manufacturer shall be entitled to request in writing a hearing before the director or his or her representative. Such request must be delivered to the department within 60 days after the notice of refusal is issued.
- (b)** The hearing shall be conducted by the director or by a hearing officer appointed by the director from the officers or employees of the department at a time and place designated by the department.
- (c)** Upon conclusion of the hearing the director or hearing officer shall make findings and render a determination on behalf of the department and shall notify the manufacturer within 30 days.
- (d)** All matters in a hearing not covered by this section shall be governed, as far as applicable, by Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government code.

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Section 11500 et seq., Government Code; Section 38750, Vehicle Code.

**§228.20. Suspension or Revocation of Permit.**

(a) The department will provide a 30-day written notice, under the procedures specified in Government Code section 11505, to the manufacturer before suspending or revoking the Permit to Deploy Autonomous Vehicles on Public Streets. The department may suspend or revoke a Permit to Deploy Autonomous Vehicles on Public Streets for any of the following reasons:

- (1) The manufacturer has failed to maintain financial responsibility in the amount required by Vehicle Code section 38750, subsection (c)(3), and section 228.04 of this Article.
- (2) The manufacturer submitted incorrect or misleading information in the Application for a Permit to Deploy Autonomous Vehicles on Public Streets.
- (3) The manufacturer fails to report to the department any change to the information or certifications required and provided in the application under Section 228.10 within 10 days of the date of the change.
- (4) The manufacturer fails to comply with any of the provisions of this article related to the deployment of autonomous vehicles.

(b) The department may immediately suspend the Permit to Deploy Autonomous Vehicles on Public Streets for any of the following reasons:

- (1) If a manufacturer's vehicle manufacturer, distributor, or remanufacturer license has been suspended or revoked by the department.
- (2) If the manufacturer deploys any vehicle equipped with autonomous vehicle functions that were not disclosed in the manufacturer's Application for a Permit to Deploy Autonomous Vehicles on Public Streets.
- (3) If the manufacturer has misrepresented any information related to safety of the autonomous technology of its vehicles.
- (4) If the National Highway Traffic Safety Administration determines that the autonomous technology of the manufacturer's vehicles makes inoperative any federally required motor vehicle safety systems.
- (5) If the manufacturer's autonomous vehicles are subject to an open National Highway Traffic Safety Administration recall related to the vehicle's autonomous technology. Such immediate suspension shall apply

only to those vehicles the National Highway Traffic Safety Administration has deemed subject to the open recall.

(6) Based upon the performance of the vehicles, the department determines the manufacturer's vehicles are not safe for the public's operation.

(c) Upon suspension or revocation by the department of a Permit to Deploy Autonomous Vehicles on Public Streets, a manufacturer shall cease all further deployments of affected autonomous vehicles with the affected autonomous technology feature enabled on public streets until the department has verified that the manufacturer has taken appropriate action to correct the deficiencies or complied with the National Highway Traffic Safety Administration recall that led to the suspension or revocation and the suspension has been lifted or the revocation withdrawn by the department.

(d) Upon suspension or revocation by the department of a Permit to Deploy Autonomous Vehicles on Public Streets, a manufacturer shall also notify all owners of its autonomous vehicles that the manufacturer's Permit to Deploy has been suspended or revoked by the department and the reason for the suspension or revocation.

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Section 11505, Government Code, Section 38750, Vehicle Code.

#### **§228.22. Administrative Procedures for a Suspension or Revocation of Permit.**

(a) A manufacturer that has received an order of suspension or revocation from the department may request in writing a hearing on the matter as specified in Section 228.18. Any hearing shall be conducted by the director or by a hearing officer appointed by the director from the officers or employees of the department.

(1) If a manufacturer wishes to have a hearing before the effective date of the order of suspension or revocation, the request for hearing shall be made within ten days of the receipt of the order of suspension or revocation. The hearing shall be held at a time and place designated by the department.

(2) The department shall hold the hearing before the effective date of the order of suspension or revocation if the request for hearing is received by the by the department on or before ten days after the manufacturer's receipt of the order of suspension or revocation.

- (3) The only issues at the hearing on an order of suspension or revocation shall be those listed in subsections (a) and (b) of Section 228.20.
- (4) Upon conclusion of the hearing the director or the hearing officer shall make findings and render a determination of behalf of the department and shall notify the manufacturer. The decision shall take effect as stated in the order of suspension or revocation.
- (5) A request for hearing does not stay the order of suspension or revocation. If the department does not conduct a hearing and make a determination before the effective date of the suspension or revocation, the department shall stay the effective date of the order pending the determination.
- (b) If a suspension or revocation is effective immediately as specified in subsection (b) of Section 228.20, the manufacturer may request a hearing within five days of receipt of the order of suspension or revocation. The department shall provide for a hearing within a reasonable time not to exceed 21 days after a written request for hearing is filed with the department. A request for hearing does not stay the effective date of the suspension or revocation.

  - (1) If the order is for a suspension of a permit, at the hearing the manufacturer shall show cause why the suspension should not be continued. Following the hearing the department may terminate the suspension or continue the suspension in effect.
  - (2) If the order is for a revocation of a permit, at the hearing the manufacturer shall show cause why the permit should not be revoked. Following the hearing the department may sustain the revocation or determine that the permit should be suspended.
- (c) All matters in a hearing not covered by this section shall be governed, as far as applicable, by Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

#### **§228.24. Information Privacy.**

(a) The manufacturer shall either:

(1) Provide a written disclosure to the driver of an autonomous vehicle, and for vehicles that do not require a driver, the passengers of the vehicle, that describes the personal information collected by the autonomous technology that is not necessary for the safe operation of the vehicle and how it will be used; or,

(2) Anonymize the information that is not necessary for the safe operation of the vehicle.

(b) With respect to a vehicle the manufacturer sells or leases to a customer, if the information is not anonymized, the manufacturer shall obtain the written approval of the registered owner or lessee of an autonomous vehicle to collect any personal information by the autonomous technology that is not necessary for the safe operation of the vehicle.

(c) A manufacturer shall not deny use of an autonomous vehicle to any person on the basis that they do not provide the written approval specified in subsection (b) of this section.

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Section 38750, Vehicle Code.

#### **§228.26. Registration of Autonomous Vehicles.**

(a) In addition to the requirements set forth in Vehicle Code section 4453 (a), a registration card for an autonomous vehicle shall identify the vehicle as autonomous.

(b) In addition to the requirements of Vehicle Code section 4451, the certificate of ownership for an autonomous vehicle shall identify the vehicle as autonomous.

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Section 43014, Health and Safety Code; Section 672, 4150, 5902, and 38750, Vehicle Code.

## **§228.28. Statements About Autonomous Technology**

**(a)** No manufacturer or its agents shall represent in any advertising for the sale or lease of a vehicle that a vehicle is autonomous unless it meets all of the following requirements:

**(1)** The vehicle meets the definition of an autonomous vehicle specified in Vehicle Code section 38750 and section 228.02 (b) of Article 3.8.

**(2)** The vehicle was manufactured by a manufacturer licensed pursuant to Vehicle Code section 11701 also holding a valid autonomous vehicle manufacturer's permit issued pursuant to this Article at the time of the vehicle's manufacture.

**(b)** The use of terms to describe the performance of a vehicle that is known, or by the exercise of reasonable care should be known, will likely induce a reasonably prudent person to believe a vehicle is autonomous, as defined in Vehicle Code section 38750 and 228.02 (b) of Article 3.8, constitute an advertisement that the vehicle is autonomous for the purposes of this section and Vehicle Code section 11713.

NOTE: Authority cited: Sections 1651, and 38750, Vehicle Code. Reference: Sections 11701, 11713, and 38750, Vehicle Code.